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ABSTRACT

Working on the assumption that listeners would be more convinced and persuaded by a speaker with whom they could identify, a study asked black and white college students to evaluate a speaker with a black or white dialect, introducing them to an innovation in mathematics. Half of the black subjects were randomly assigned to listen to a black speaker; the other half were assigned to listen to a white speaker. The same procedure was followed for the white subjects. It was hypothesized that the speaker with a dialect similar to the recipient would be rated more credible than the dissimilar counterpart, and would produce more attitude change and information recall. The analysis revealed that none of the three hypotheses was supported. However, when the data were validated by selecting only those subjects who had correctly indicated ethnic similarity/dissimilarity with the speaker, it was found that the similar speaker was thought to be significantly more credible than a dissimilar speaker. The two hypotheses regarding attitude change and recall remained unsupported. (HOD)

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THE INFLUENCE OF SPEAKER DIALECT AND RECEIVER RACE ON SOURCE CREDIBILITY, ATTITUDE CHANGE AND RECALL

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ABSTRACT

THE INFLUENCE OF SPEAKER DIALECT AND RECEIVER RACE ON SOURCE CREDIBILITY, ATTITUDE CHANGE AND RECALL.

By Anjali S. Joshi, Marquette University.

Using a 2 x 2 factorial design, Black and White subjects heard speakers with a Black or White dialect, introducing them to an innovation in mathematics.

It was hypothesized that the speaker with a dialect similar to the recipient would be rated more credible than his dissimilar counterpart, and would produce more attitude change and information recall.

An initial analysis revealed that none of the three hypotheses were supported. However, when the data was validated by selecting only those subjects who had 'correctly' indicated ethnic similarity/dissimilarity with the speaker, it was found that the similar speaker was thought to be significantly more credible than a dissimilar speaker. However, the two hypotheses regarding attitude change and recall remained unsupported.

The study questions the function of source credibility and suggests that it may not be a barrier in the diffusion of innovations.

In 1975, the Indian pilot project SITE (Satellites for Instructional Television Experiment) reached almost 2,400 villages. One of its primary goals was to introduce agricultural innovations to rural adults. Chaffee (1975) writes that although most diffusion studies report a normal ogive or S-curve, indicating 100% diffusion as the end result of an information /innovation diffusion process, this is rarely the case in reality. He contends that these results are due to the fact that the researchers do not take into account restraints or barriers to diffusion, and are in fact analysing a null model, or a model which assumes a randomness of interaction within a population, and a total abscence of restraints. Restraints can be source related, topic specific, or receiver related.

These findings hold true for SITE. Some qualitative studies conducted by Bangalore University (Eapen, 1979) state that source - related barriers prevented the communicators from being perceived as credible. Some of these barriers were due to the fact that the communicator used a dialect employed by the more educated and affluent members of Indian society, and he was thus thought to be far removed from the culture and needs of rural India. This in turn lead the receivers to devalue the programs they viewed. Thus, source dialect affected source credibility and was therefore a barrier in the diffusion process.

It is clear that the researchers and programmers did not carefully research the various barriers that could impede the flow of the information they seeked to diffuse. As Chaffee notes, these are interesting variables that need further study.

LITERATURE REVIEW

Source Credibility

Theorists since Aristotle (4 B.C.) have recognised the importance of communicator credibility as a variable affecting the persuasion process. In this century, Hovland et al (1951,1953) outline a major approach towards attitude change. The authors define source credibility as "acceptance or rejection of a message based on who said it." A message source may be a person, group or even a label that has a favorable or unfavorable connotation for the message recipient. The authors conclude that credibility is largely made up of two dimensions - expertise and trustworthiness. Expertise is when a speaker is capable of making correct assertions, and trustworthiness is the degree to which an audience perceives the assertions to be valid. They argue that most people have a need to "be right" on an issue, and an expert's opinion would be seen as the right opinion to have.

Kelman (1955) defines credibility as the extent to which the source is seen as having the right answers, and is motivated to communicate them. The higher the credibility of the source, the greater the internalization of his persuasive message will be. Anderson and Clevenger (1963) state that credibility is intrinsic when the source offers information about himself as a part of the message, and is extrinsic when it is a result of non - message factors.

Delia (1976) defines source credibility as "attributions concerning a communicator which are the basis for the acceptance or rejection of his assertions." Cronkhite and Liska (1976) define it as the capability of the source to produce changes in a receiver's opinions, policies and overt behavior.

In a seminal experiment, Berlo, Lemert and Mertz (1969) argued that the source "image" should be defined in terms of the perceptions of the receiver, and not in terms of the objective characteristics of the source. Factor analysis revealed that credibility was a multi-faceted construct, and comprised of three dimensions- safety, qualification and dynamism. The first two factors coincide remarkably with those isolated by Hovland et al. However, the results of several recent studies (Appelbaum and Anatole,1973; McCroskey et al,1974; Liska,1978) are striking in undermining the hypothesis that general dimensions are

used in evaluating all communication sources.

Cronkhite and Liska (1980) write,

"The factor analytic research paradigm has severely alienated the construct of credibility from the process in which it participates. Asking someone to contemplate and rate a potential source (for example, Ted Kennedy) or a hypothetical source who is described without presenting or atleast describing an actual communication radically violates the concept of communication as process. In such a paradigm, the potential source is assumed to be static, and the rater, who is not even a listener, is assumed to be static, and the situation and the communication are non-existant."

While research has established a positive relationship between attitude change andsource credibility, no such relationship has been established between source credibility and recall. Hovland and Weiss (1951), Hovland and Mandell (1952), Paulson (1954), Tompkin and Samovar (1964) and King (1966) have found that the amount of information contained in the message remembered by the subjects does not depend on the varying levels of credibility of the communicators. Bauer (1965) explains it by the reasoning that as long as the subjects know that the source is high in credibility, they do not pay attention to the message, but accept the conclusions offered by the credible source.

Miller and Burgoon (1978) and Sternthal, Phillips and Dholakia (1978) write that the intense level of enquiry triggered off by the Yale group has fostered the belief that few questions regarding credibility remain unanswered. Thus, interest in it has waned. However, as is indicated by research outlined earlier, we do not yet have a clear picture of credibility. The traditional model, which suggests two salient dimensions - expertise and trustworthiness is a very rational paradigm, which assumes that receivers are always influenced by the more expert and/or trustworthy source. Bostrom (1983) suggests that we incorporate the research done in the area of normative influence and homophily. This may give us a clearer understanding of this multi-dimensional construct.

Interpersonal similarity or Homophily

Deutsch and Gerard (1955) offer evidence of the normative credibility effect. This effect can be both positive or negative. If the source is a member of a group which the receivers perceive positively, then the source will have high credibility. If, on the other hand, the source holds membership in a group that elicits hostility in the receivers, his credibility will be endangered.

Rogers (1983), Rogers and Bhowmik (1970) Rogers and Shoemaker (1969) have termed this type of credibility homophily, and have cited many instances in which innovations at the rural and technological levels have failed to diffuse because the source and the receiver were not similar. The pilot project SITE was not optimally successful partially due to this reason.

Simons et.al. (1970) write that attitude change towards the position advocated by the source depends on the extent to which interpersonal similarity or dissimilarity is perceived as having instrumental value for the receiver. McGuire (1969) states, "Presumably the receiver, to the extent that he perceives the source to be like himself in diverse characteristics, assumes that they also share common needs and goals. The receiver might therefore conclude that what the source is urging is good for "our kind of people", and thus changes his attitudes accordingly."

Dialect, perceived similarity and credibility

Anisfeld et.al. (1960) and Fishman (1970) point out that spoken language is an identifying feature of members of a national or cultural group, and any listener's attitude toward members of a particular group should generalise to the language they use.

Trudgill (1983) defines dialect as social and regional variations of a language. At times, dialect seems to highlight the relevant stereotype of the group or community the individual speaker is perceived to belong to. Chambers and Trudgill (1980) define it as subdivisions of a particular language.

Miller and Hewgill (1964) state that while credibility researchers place great emphasis on the "who the source is" dimension, they do not place adequate emphasis on how the source says it. It would seem reasonable to suppose that if non-linguistic cues to the speakers credibility can influence the persuasiveness of his message, then linguistic cues to his competence and trustworthiness could have the same effects. Some of the studies measuring evaluative reactions bear out the homophily principle. Speakers with a similar dialect were thought to be more trustworthy and competent than speakers with a dissimilar accent (Horsch and Bowers,1969; Giles,1973; Miller,1975). Others conclude that the subjects devalue the similar speaker on certain traits, and rate him highly on others (Anisfeld, Bogo, Lambert, 1960; Buck, 1968; de la Zerda Flores and Hopper, 1975; Delia, 1975). Houck and Bowers (1969) and Giles (1973) found that on matters relevant to regional norms, a speaker from the region concerned was rated as being more competent, even though the judges were not from that

region. However, when the message content was irrelevent to regional norms, the subjects rated the speaker similar to themselves as higher in competence and trustworthiness. Semmel (1968) Crowl and MacGinite (1970) found that White subjects rated White speakers more highly on several personality and competence scales than their Black counterparts. Aronson and Golden (1962) tested the effects of dialect and race on opinion change and found that subjects prejudiced against Negros to be under-influenced by the Negro communicator, and those unprejudiced to be over-influenced by the Negro communicator.

Thus, drawing all this research together, it would seem that when it comes to the attitudinal consequences of an argument, listeners may be more convinced and persuaded by a speaker with whom they can identify - an ingroup member.

Street and Hopper (1982) note that speech style is an important dimension on which interactants appear to base evaluative judgements and encoding choices. Listener goals and perceptual biases such as perceived similarity and language attitudes (including influences of race/ethnicity and status) affect the evaluation process.

Derivation of Hypothesis for testing

Partially based on the relevant previous literature reviewed, several hypotheses are proposed for testing. They cover and interlink three areas of interest.

Source Credibility It was hypothesized that after examining the evaluation made of the credibility of the source by the audience on a 15 item semantic differential scale,

H1a There will be an interaction between the race of the subject and the dialect used by the speaker such that the speaker with a dialect similar to the subject will be perceived as more credible than the one with the dissimilar dialect.

H1b There will be a positive correlation between source credibility and recall.

It was further hypothesized that after assessing the responses of the subjects to a six item Likert-type scale measuring attitude toward mathematics both before and after the subjects heard the speaker:

H2a There will be an interaction between the race of the subject and the dialect heard such that subjects who heard a speaker with a similar dialect will change their attitude towards mathematics more than subjects who heard a dissimilar speaker.

H2b There will be a positive correlation between attitude change and source credibility.

Although previous research has indicated that information recall is not affected by high or low source credibility, it was measured because it would provide an idea of the affective reactions of the listeners to the speaker. Also, recent studies in credibility have not been concerned with this variable. It was felt that the relationship between speaker dialect and information recall and recall and source credibility needed to be investigated again. It was hypothesized that:

H3a There will be an interaction effect between the race of the subject and the dialect heard such that subjects will recall more of the information if it was communicated by a speaker with a similar dialect than if it was communicated by a dissimilar speaker.

Method

Design

The design of the experiment was a 2 x 2 factorial design, since it enables the testing of interaction hypotheses (Kerlinger, 1973,1979; Cozby,1977). The two independent variables in this study were the race of the subjects (Black or White) and the dialect heard by the subjects (a Black dialect or a Mid-Western dialect).

Approximately half the randomly selected experimental subjects (N = 134) were Black and the other half were White students from Marquette University and the University of Wisconsin - Milwaukee. Half the Black subjects were randomly assigned to listen to a Black speaker (N = 31). The other half were assigned to listen to a White speaker (N = 33). The same procedure was followed for the White subjects (N of cell where White students heard a Black speaker = 38; N of cell where White subjects heard a White speaker = 32). Thus, the design yielded four factorial cells or groups for the purpose of comparison.

Subjects were asked to evaluate a candidate for the job of a radio-announcer for the Marquette University radio-network. Before they evaluated a speaker, subjects answered a questionnaire regarding their attitude towards mathematics. After this was collected back from them, the three-minute speech was played. Subjects were instructed to try and imagine what a person with that voice would be like, and were told to evaluate his potential for being a good radio announcer. A questionnaire, containing items measuring the subjects' evaluation of the credibility of the source, the recall of the message heard, the perceived similarity with the speaker and behavioral intentions, was then administered. The last page again asked for the subjects' feelings towards mathematics. Once all

the questionnaires had been handed back to the experimenter, the subjects were debriefed.

The message

The same message, introducing subjects to an "innovative" branch of mathematics, was recorded by two Marquette students - one a Black student and the other a Mid-Westerner. The speaker emphasized that it would soon be a big trend, and asked the audience to be a part of it. The speaker introduced the subjects to something new to avoid the confounding effects of the subjects' previous knowledge or attitude towards this "innovation". Before the speech was heard by the subjects, it was pretested on 15 Journalism undergraduates. All of them could correctly identify the ethnicity of the speakers. The questionnaire was also pretested to ensure that the instructions provided on it were simple and easily understood.

Measurement

Credibility. To measure credibility, the 15 item semantic differential scale devised by Berlo,Lemert and Mertz (1969) was used. This scale was chosen because it is reported to have a reliabilty of .80 (McCroskey and Young,1981). It has been used in many experiments (Delia,1976; Tuppen,1976; Miller,1976). The fifteen items measure three dimensions of source credibility - Safety (trustworthiness), Qualification and Dynamism.

Each are tapped by five bi-polar adjective pairs:

Safety: safe-unsafe; just-unjust; kind-cruel; friendly-unfriendly; honest-dishonest.

Qualification: trained-untrained; experienced - inexperienced; skilled-unskilled; qualified-unqualified; informed- uninformed.

Dynamism: aggressive-meek; emphatic-hesitant; bold-timid; active- passive; energetic-tired.

When these items were pre-tested for this experiment, the subjects were puzzled by the first adjective pair measuring safety (safe-unsafe). It was therefore changed to trustworthy-untrustworthy. To reduce answering bias, 6 of the 15 items were reversed. While coding, these items were negatively coded so that an evaluation on the positive end of the scale was always 7, and on the negative end was always 1.

Attitude towards Mathematics

An abbreviated version of the Revised Math Attitude scale, developed by Aiken and Dreger (1961) was used. Three positive and three negative items were chosen. The authors report a test-retest reliabilty of .94 for the scale (Aiken and Dreger,1961). It has good content validity. The items have a five point Likert response scale, ranging from Strongly Disagree (1), Disagree (2), Feel Neutral (3), Agree (4) and Strongly Agree (5). Scores of responses to the negative items are reversed.

Positive items:

1. Mathematics is fascinating and fun.

2. I am always at ease in mathematics, and I like it very much.

3. Mathematics is very interesting to me, and I always enjoy math courses.

Negative items:

1. I am always under a terrible strain in a math class.

2. Mathematics makes me feel as though I am lost in a jungle of numbers, and can't find my way out.

3. When I hear the word math, I have a feeling of dislike.

To avoid response bias, the positive and the negative items were alternated. Subjects responded to this questionnaire both before and after hearing the speaker.

Also, the subjects' aptitude towards mathematics was measured by asking them to respond to three question. They had to indicate their average grade in math classes by choosing one of 5 options: 1.5 - 2 (1), 2 - 2.5 (2), 2.5 - 3 (3), 3 - 3.5 (4) and 3.5 - 4 (5). The second one pertained to their own estimate of their aptitude for mathematics. The choices were: Very poor (1), Poor (2), Average (3), Good (4), Very Good (5). The last question asked them whether they would take mathematics as an elective course. The options were: No (1), Maybe (2) and Yes (3). Again, scores on these items were summed up and divided by 3 to form a new variable, aptitude. This score validated the earlier questionnaire regarding attitudes towards mathematics.

Similarity. To measure perceived homophily, four items from the perceived homophily scale developed by McCroskey et.al was used. The authors report high content validity as well as high reliability for this scale. The four items were,

(1). Similar to me - Different from me.
(2). Like me - Unlike me.
(3). From social class similar to mine - From social class different from mine.
(4). Background similar to mine - Background different from mine.

The subjects were asked to rate how the speaker compared to members of their ethnic group (for this, the items were re-worded as "Similar to us - Different from us" etc.).

Recall. Five true-false items were designed to measure the information recalled after listening to a similar or a dissimilar speaker. If a subject answered all the five items correctly, he obtained five points for the variable recall. If he did not answer any of the five questions correctly, he received a score of zero for this variable, and so forth.

Behavioral Intentions. Five questions, measuring the subjects' attitude towards the innovation (the new math course) were included in the questionnaire. It was felt that these variables might affect the credibility of the source and the amount of recall. The questions were Likert-type scales, asking the respondents to either strongly disagree (1), disagree (2), feel neutral (3), agree (4) or strongly agree (5) with each statement. The five statements were,

(1). If this course was offered at my university, I would not enroll for it.
(2). I want more information about the course.
(3). This course would not be useful for me.
(4). This course is too complex for me.
(5). This course seems to be more interesting than other courses offered at my university.

This was mainly used as a control variable, to test the relationship between recall and credibility.

Results

Credibility

Pearson correlation coefficients revealed a strong relationship between the fifteen items and the summated score for credibility (in all cases, $p = .001$). It can therefore be assumed that the measuring instrument has good internal validity. A high reliability coefficient of .862 obtained for the scale indicated that the scale is an accurate and stable measure of credibility.

A factor analysis of the fifteen semantic differential adjective pairs comprising the credibility scale, using varimax rotation, show that inspite of significant inter-item correlations, three factors do emerge from the analysis (Table I). These factors are quite similar to the ones isolated by Berlo *et al*(1969). The three factors accounted for almost 60 per cent of the total variance. The three factors were subsequently named expertise, trustworthiness and dynamism. However, the adjective pairs, informed - uninformed and energetic - tired loaded uncharacteristically, in that they loaded on the dynamism and trustworthiness factors respectively.

Table I

Factor analysis of items measuring credibility.

ITEM (scales measuring credibility)	FACTOR NAME (Loadings)		
	EXPERTISE	TRUST-WORTHINESS	DYNAMISM
1.Trustworthy-Untrustworthy.	.13	.62	.07
2.Just-Unjust.	.19	.55	.14
3.Kind-Unkind.	.10	.74	.08
4.Friendly-Unfriendly.	.20	.61	.16
5.Honest-Dishonest.	.30	.66	.15
6.Trained-Untrained.	.80	.24	.09
7.Qualified-Unqualified.	.71	.44	.12
8.Experienced-Inexperienced.	.81	.13	.13
9.Skilled-Unskilled.	.60	.18	.15
10.Informed-Uninformed.	.31	.16	.33
11.Agressive-Meek.	.05	.09	.50
12.Emphatic-Hesitant.	.20	.36	.53
13.Bold-Timid.	.09	.04	.85
14.Active-Passive.	.11	.19	.74
15.Energetic-Tired.	.17	.53	.26

N of cases = 134
Factor 1. Eigenvalue=4.98, Percentage of Variance=66.3
Factor 2. Eigenvalue=1.42, Percentage of Variance=18.9
Factor 3. Eigenvalue=1.11, Percentage of Variance=14.9

On the whole, however, the fifteen marker scales that were used to measure credibility did yield three factors, as found by previous research. Most of the items did load as hypothesized on the three factors.

Tests of Hypotheses

Source Credibility: H1a, H1b

To test the effects of the two independent variables on the dependent variable credibility, a two-way analysis of variance was computed (Table II). The two-way interaction effect of the approached significance ($F_{1,133} = 3.21$, $p = .075$). It was felt that one possible reason for the non-significance of the interaction was that some subjects could have failed to realise that the dialect they heard was similar/dissimilar from their own. Since the literature review suggested that similar or dissimilar dialects were cues to ethnic similarity, it was decided to examine whether the hypotheses proposed for the study were supported by the analysis of the responses of only those subjects who correctly used the dialect heard as a cue to indicate ethnic similarity with the speaker.

Table II

Description of Subpopulations

CRITERION VARIABLE BROKEN DOWN BY BY	CREDIBILITY RACE DIALECT			
	Value Label	Sum	Mean	N
For Entire Population		650.06	4.85	134
Race	Black	293.53	4.59	64
Dialect	Black	143.73	4.64	31
Dialect	White	149.80	4.54	33
Race	White	356.53	5.09	70
Dialect	Black	186.20	4.90	38
Dialect	White	170.33	5.32	32

Total Cases = 134

ANALYSIS OF VARIANCE

BY	CREDIBILITY RACE DIALECT	PERCEIVED CREDIBILITY RACE OF THE SUBJECT DIALECT SPOKEN BY THE SOURCE				
Source of Variation		SS	df	MS	F	p =
Main Effects		9.60	2	4.70	6.80	.001
Race		8.90	1	8.90	12.69	.000
Dialect		1.00	1	1.00	1.43	.233
Two-way interactions		2.25	1	2.25	3.21	.075
Race	Dialect	2.25	1	2.25	3.21	.075
Explained		11.84	3	3.95	5.62	.001
Residual		91.28	130	.70		
Total		103.08	133	.77		

N of Cases = 134

Crosstabulations generated a table describing the response pattern of subjects in the four cells to perceived ethnic similarity with the speaker. The four cells (or groups) were arbitrarily assigned numbers. The cell where White subjects heard a White speaker was called Group 1. The cell where White subjects heard a Black speaker was called Group 2. The cell where Black subjects heard a Black speaker was called Group 3. The cell where Black subjects heard a White subject was called Group 4.

The findings (Table III) show that as expected, the ratings for ethnic similarity by subjects in Groups 1 and 3 tended to be above average, and the rating for similarity with the speaker for Group 4 tended to be below average. The average, used as a cut-off point to select the validated sample, was arbitrarily set at 4.0, since it is the mean of a 7 point scale. This also reflected the combined mean of the four groups for this measure. However, contrary to expectations, a majority of White subjects who heard a speaker with a Black dialect rated him as being ethnically similar to themselves. It is possible that, for this group, the speaker's dialect is not a good cue to ethnic similarity. It is also possible that White students do not differentiate between a Black and a White person on the basis of ethnic similarity.

Table III

Crosstabulations for Groups by Perceived Ethnic similarity

PERCEIVED ETHNIC SIMILARITY (1-7 point scale)	GROUP 1	GROUP 2	GROUP 3	GROUP 4	SUM
N of Subjects who correctly indicated ethnic similarity.	32	14	27	24	97
N of Subjects who incorrectly indicated ethnic similarity	0	24	4	9	37
	32	38	31	33	134

Chi Square = 132.5 df=72 p = .000

Group 1 = White subjects heard a White speaker.
Group 2 = White subjects heard a Black speaker.
Group 3 = Black subjects heard a Black speaker.
Group 4 = Black subjects heard a White speaker.

For further analysis, only those subjects in Groups 1 and 3 scoring more than 4.0 for this construct were included. Also, only those subjects in Groups 2 and 4 scoring less than 4.0 were included. This selection reduced the total number of subjects from 134 to 97. However, these scores were rounded figures. When subjects were selected according to their raw scores on this the sample size was further reduced to 92. All further tests of hypotheses were computed first using the original sample (N = 134) and then using the validated sample (N = 92).

A two-way analysis of variance computed for credibility, using the validated sample (Table IV) revealed a statistically significant interaction of the two independent variables (F)1,91(= 9.6, p = .001). Neither race of the subject nor the dialect heard had main effects on credibility. This indicates that as hypothesized, perceptions of credibility differ significantly depending on the race of the receiver and the dialect employed by the speaker. It also suggests that for a significant difference in the perception of credibility, it is essential that subjects realise that the speaker is either ethnically similar or dissimilar from themselves.

Table IV

Description of the validated Subpopulations

CRITERION VARIABLE BROKEN DOWN BY BY	CREDIBILITY RACE DIALECT			
	Value Label	Sum	Mean	N
For Entire Population		450.00	4.89	92
Race	Black	223.26	4.75	47
Dialect	Black	92.73	4.88	19
Dialect	White	130.53	4.66	28
Race	White	226.73	5.04	45
Dialect	Black	76.59	4.05	17
Dialect	White	150.13	5.36	28

Total Cases = 92

ANALYSIS OF VARIANCE FOR THE VALIDATED SAMPLE

BY	CREDIBILITY RACE DIALECT	PERCEPTION OF CREDIBILITY RACE OF THE SUBJECT DIALECT SPOKEN BY THE SOURCE			
Source of Variation	SS	df	MS	F	p =
Main Effects	3.88	2	1.94	2.95	.057
Race	1.80	1	1.80	2.74	.101
Dialect	1.97	1	1.97	3.00	.086
Two-way interactions	6.31	1	6.31	9.59	.002
Race Dialect	6.31	1	6.31	9.59	.002
Explained	10.20	3	3.40	5.16	.002
Residual	57.91	88	.65		
Total	68.12	91	.75		

N of Cases = 92

Therefore, H1a was supported by the analysis of the data of the validated sample.

In order to test H1b, the mean score for the items measuring credibility was correlated with the score for recall, using the original sample (Table V). The correlation was not statistically significant ($p > .05$). The relationship between these two variables for the validated sample (Table VI) was similarly non-significant. For this sample, contrary to expectations, the two variables correlated negatively with each other.

The initial attitude subjects had towards mathematics might be contaminating the relationship. Those who dislike mathematics or those with a poor aptitude for it may not be interested in the message, and may therefore not recall much of the information contained in it. Those who are not interested in finding out more about the message may tend to forget it.

TABLE V

Pearson Correlations between the dependent variables

ITEM	CREDIBILITY	RECALL
CREDIBILITY	1.00	.06
RECALL		1.00

N of Cases = 134

*: p = .001 **: p < .01 ***: p < .05

TABLE VI

Pearson Correlations between the dependent variables for the vali sample

ITEM	CREDIBILITY	RECALL
CREDIBILITY	1.00	-.02
RECALL		1.00

N of cases=92.

*: p=.001 **: p < .01 ***: P < .05

Even after the effects of these variables were controlled by a partial correlation analysis, none of the correlations were significant for the original as well as for the validated sample. This indicates that even though receivers may find a source credible, they may not remember the information his/her message contained. It is possible that subjects, knowing they would have to evaluate the speaker after the speech was over, may have been concentrating on picking up cues to the speaker's personality, rather than listening to the message.

Therefore, H1b could not be supported by the data of either the original or the validated sample.

Attitude Change: H2a, H2b

It was found that correlations between the six items were statistically significant (in all the cases, $p=.001$). A high reliability coefficient of .89 indicated that the scale has good reliability. A two-way analysis of variance, controlling for the

Table VII

Description of Subpopulations

CRITERION VARIABLE BROKEN DOWN BY BY	CHANGE RACE DIALECT			
	Value Label	Sum	Mean	N
For Entire Population		409.83	3.06	134
Race	Black	191.16	2.99	64
Dialect	Black	94.66	3.05	31
Dialect	White	96.50	2.92	33
Race	White	218.66	3.12	70
Dialect	Black	108.33	2.85	38
Dialect	White	110.33	3.45	32

Total Cases = 134

ANALYSIS OF VARIANCE

CHANGE BY RACE DIALECT
CHANGE IN ATTITUDES
RACE OF THE SUBJECT
DIALECT SPOKEN BY THE SOURCE
WITH INITIAL ATTITUDE AS A COVARIATE

Source of Variation	SS	df	MS	F	p =
Covariate	111.28	1	111.28	163.30	.000
Initial Attitude towards math.	111.28	1	111.28	163.30	.000
Main Effects	.19	2	.09	.15	.864
Race	.17	1	.17	.25	.617
Dialect	.04	1	.04	.06	.814
Two-way interactions	.07	1	.07	.11	.743
Race Dialect	.07	1	.07	.11	.743
Explained	111.55	4	27.89	40.93	.000
Residual	87.91	129	.68		
Total	199.46	133	1.49		

N of Cases = 134

effects of initial attitudes towards math was computed to test H2a. For both the samples, the interaction was nonsignificant (for the original sample, F)1,133(= .11, p = .743; for the validated sample, F)1,91(= .06, p = .803), while the interaction of the variable covaried (initial attitude towards mathematics) with the criterion variable attitude change in both the samples was highly significant (p = .000) Thus, for both the original (Table VII) as well as the validated sample (Table VIII), the results indicated that the variance in attitude change was mostly accounted for by the initial attitudes the subjects held towards mathematics, rather than by the interaction of the two independent variables. In other words, there was no significant change in the attitudes of the receivers as a result of the message heard. Therefore, H2a could not be supported by the data.

A partial correlation analysis correlating scores on the questionnaire testing attitudes towards math after the subjects had heard the speaker (t)2() with credibility and controlling for the aptitude of the respondent for mathematics and his/her initial attitude towards mathematics (t)1() yielded a statistically insignificant correlation coefficient for both the samples. Again, this indicates that even though the receivers may find a source credible (as did subjects in the validated sample), they do not change their

Table VIII

Description of the Validated Subpopulations

CRITERION VARIABLE BROKEN DOWN BY BY	CHANGE RACE DIALECT			
	Value Label	Sum	Mean	N
For Entire Population		291.50	3.17	92
Race	Black	148.17	3.15	47
Dialect	Black	59.83	3.15	19
Dialect	White	88.33	3.15	28
Race	White	143.33	3.18	45
Dialect	Black	42.33	2.49	17
Dialect	White	101.00	3.61	28

Total Cases = 92

ANALYSIS OF VARIANCE FOR THE VALIDATED SUBPOPULATIONS

	CHANGE	CHANGE IN ATTITUDES
BY	RACE	RACE OF THE SUBJECT
	DIALECT	DIALECT SPOKEN BY THE SOURCE
WITH	INITIAL ATTITUDE AS A COVARIATE	

Source of Variation	SS	df	MS	F	p =
Covariate	97.14	1	97.14	303.36	.000
Initial Attitude towards math.	97.14	1	97.14	303.36	.000
Main Effects	.23	2	.11	.35	.702
Race	.00	1	.00	.01	.940
Dialect	.23	1	.23	.71	.403
Two-way interactions	.02	1	.02	.06	.803
Race Dialect	.02	1	.02	.06	.803
Explained	97.39	4	24.34	76.03	.000
Residual	27.86	87	.32		
Total	125.25	91	1.38		

N of Cases = 92

attitudes in the expected direction. These results are contrary to the findings of previous research (Hovland et al,1951; Aronson and Golden, 1962; Aronson, Turner and Carlsmith,1964).

These findings fail to support H2a-b.

Recall: H3

A two-way analysis of variance was computed to test the interaction of the two independent variables on recall. For the original (Table IX) as well as for the validated sample (Table X), there was no significant interaction of race and the dialect heard on recall (F)1,133(= .65, p = .419, and F)1,91(= .68, p = .412). This statistically insignificant interaction could be due to the fact that since subjects knew they would have to rate the speaker on several scales after they had heard the speech, they may have been concentrating on picking up cues to the speaker's personality, and may not have attended to the information presented. It is also possible that the dialect of the speaker (and therefore ethnic similarity with him) does not affect the amount of information recalled. These findings are consistant with earlier studies (Hovland and Weiss, 1951; Hovland and Mandell, 1952; Paulson, 1954; Tompkin and Samovar, 1964, King 1966). Thus, H3 could not be supported.

Table IX

Description of Subpopulations

CRITERION VARIABLE BROKEN DOWN BY BY	RECALL RACE DIALECT			
	Value Label	Sum	Mean	N
For Entire Population		406.00	3.03	134
Race	Black	184.00	2.87	64
Dialect	Black	86.00	2.77	31
Dialect	White	98.00	2.97	33
Race	White	222.00	3.17	70
Dialect	Black	122.00	3.21	38
Dialect	White	100.00	3.12	32

Total Cases = 134

ANALYSIS OF VARIANCE

BY	RECALL RACE DIALECT	AMOUNT OF INFORMATION RECALLED RACE OF THE SUBJECT DIALECT SPOKEN BY THE SOURCE				
Source of Variation		SS	df	MS	F	p =
Main Effects		3.01	2	1.51	1.51	.225
Race		2.98	1	2.98	2.98	.086
Dialect		.80	1	.80	.08	.777
Two-way interactions		.65	1	.65	.65	.419
Race	Dialect	.65	1	.65	.65	.419
Explained		3.67	3	1.22	1.22	.303
Residual		130.20	130	1.00		
Total		133.88	133	1.00		

N of Cases = 134

Table X

Description of the validated Subpopulations

CRITERION VARIABLE BROKEN DOWN BY BY	RECALL RACE DIALECT			
	Value Label	Sum	Mean	N
For Entire Population		284.00	3.09	92
Race	Black	142.00	3.02	47
Dialect	Black	55.00	2.89	19
Dialect	White	87.00	3.11	28
Race	White	142.00	3.15	45
Dialect	Black	55.00	3.23	17
Dialect	White	87.00	3.11	28
Total Cases = 92				

ANALYSIS OF VARIANCE FOT THE VALIDATED SAMPLE

BY	RECALL RACE DIALECT	AMOUNT OF INFORMATION REMEMBERED RACE OF THE SUBJECT DIALECT SPOKEN BY THE SOURCE			
Source of Variation		SS	df	MS	F	p =
Main Effects		.46	2	.23	.25	.780
Race		.40	1	.40	.43	.510
Dialect		.50	1	.50	.05	.810
Two-way interactions		.63	1	.63	.68	.412
Race	Dialect	.63	1	.63	.68	.412
Explained		1.09	3	.36	.39	.758
Residual		82.20	88	.93		
Total		83.30	91	.91		

N of Cases = 92

Discussion

A factor analysis of the items comprising credibility showed that in this experiment, the credibility construct was made up of three dimensions as found by previous research and that the three dimensions tapped source expertise, trustworthiness and dynamism.

However, the main aim of the experiment was to test interaction hypotheses. To determine whether subjects did realise that they had heard a dialect similar or dissimilar from their own, they should have been asked to indicate the ethnic group they thought the speaker belonged to. This would have unequivocally showed whether the manipulation of the independent variable had been successful.

It is highly possible that even though subjects realized that the speaker spoke in a dialect that was dissimilar from their own, they may not have felt that he was ethnically different from them just because of this factor. It is also possible that contrary to the findings of previous studies, dialect is not a very good cue to the ethnicity of the speaker. In this experiment, the Black and White speakers were young college students. Since the subjects knew this, it is possible that they based their ratings of source credibility on the fact that they were rating a peer,

rather than on the fact that they were rating a Black/White male.

However, given this shortcoming, when only the data of the subjects who had 'correctly' indicated ethnic similarity was chosen for analysis, the hypothesis proposed for testing was supported. This validation suggests that only when audiences realise that they are very similar or very dissimilar to the source, the race of the receivers and the dialect employed by the source interact to affect the perception of source credibility significantly. This finding suggests that sources should try to enhance their ethnic similarity with the audience, and downplay their dissimilarities, if they want to be perceived as credible.

In the process of communication, source credibility is not an end in itself, but is an intervening variable affecting a desired end. However, the results of this experiment indicate that source credibility affects neither attitude change nor recall. For both the original as well as the validated sample, the interaction of the two independent variables on attitude change and recall were not significant. In the former case, it appears that the initial attitude of the subjects towards mathematics determines, to a very large extent, the attitude they have towards mathematics after they have heard the speaker. In

other words, there is no significant change in their attitudes after they have heard the speaker.

These findings were rather surprising for the validated sample. These subjects had found the similar speaker significantly more credible than the dissimilar speaker. Yet they did not significantly change their attitudes towards mathematics in the expected direction. Nor was there a significant difference in the amount of information remembered.

If these findings are examined the light of the research done in the diffusion of innovations /information, it seems that source credibility does not affect the dissemination of a message or an innovation in any way. It is therefore not a barrier in that process. In other words, a credible source will neither accelerate the flow of the message, and neither will he inhibit the flow of the information. What seems to be a salient factor in attitude change is the attitudes the audiences hold before the dissemination of the message.

Contrary to the qualitative studies conducted in India (Eapen,1979), this quantitative analysis indicates that while speaker dialect does establish credibility, speaker credibility does not bring about a significant amount of attitude change in the audience, and nor does it substantially affect recall of the

information presented in the message.

Conclusion

Research in the area of the diffusion of innovations has been very narrow in its scope, in that it has assumed that the process of diffusion will have no barriers, and that participants in the process will interact randomly (Chaffee, 1975). Therefore, variables that act as barriers in the process of diffusion have not been studied adequately. This study examined the role of source credibility as a variable affecting that process.

The findings indicate that an ethnically similar source is rated as more credible than a dissimilar source. However, this perception of credibility does not affect attitude change in the expected direction. Nor does it affect the amount of the information recalled. The data indicates that it is necessary that the audience realizes that the source is ethnically similar to them for credibility perceptions to be affected. It also indicates that the manipulation of dialect was not very succesful in this experiment. For similarity perceptions to be successful, it is necessary that the source emphasise the characteristics he shares with his audience (in this case, dialect) as much as possible.

However, the findings of this experiment question the function of source credibility. In a country as diverse as India, it was thought that it was crucial to establish source - receiver ethnic similarity, if the source was to be thought credible by the receivers. Even when the source is thought to be similar and credible, s/he does not affect affect information recall or attitude change. It is therefore possible that source credibility is not a variable in the diffusion process.

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